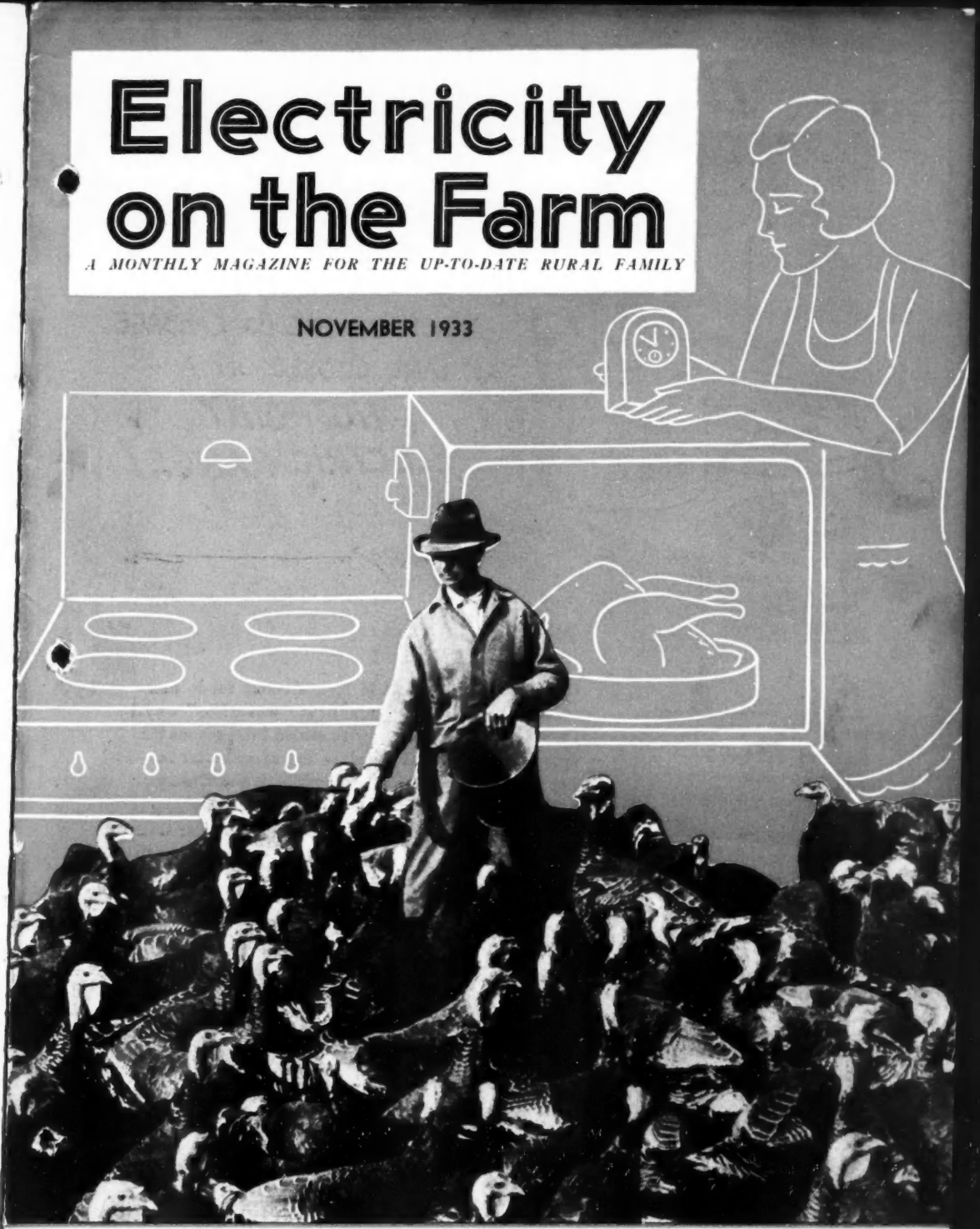
Electricity on the Farm

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY

NOVEMBER 1933



CASH PRIZES

10 of them will be awarded for best titles for the above picture. *(See inside back cover for rules.)*

Believe It or Not!

THERE IS *NO ODOR*
WHEN ONIONS OR CABBAGE
ARE COOKED ON A
HOTPOINT
ELECTRIC RANGE!

Ripley

Hi-speed Calrod heating coils available in all Hotpoint Ranges.

Hotpoint Electric Ranges are surprisingly low in price and are easy to buy. Ask your power company or electrical dealer about the partial payment plan.

THE Hotpoint Electric Range cooks foods thoroughly and quickly a new "waterless" way. Ordinary cooking dishes with sealed lids prevent the spread of strong cooking odors and make better tasting foods which contain more minerals and vitamins.

Now you can perform miracles of cooking magic like this in your own kitchen. Bring to your own kitchen the magic of Hotpoint electric cookery, with its clean, flameless heat that keeps pots and pans bright and shining, its new fast cookery, and its thick oven insulation that saves electricity.

Have more time for other duties or pastimes. Enjoy a clean, spotless kitchen. Serve nourishing foods with the essential minerals and vitamins cooked in, instead of boiled out. Go to your power company today and learn the marvelous economy and convenience of Hotpoint electric cookery.

ELECTRIC Hotpoint RANGE

Edison General Electric Appliance Co., Inc., 5610 W. Taylor Street, Chicago

November, 1933
Vol. 6 No. 11

Electricity on the Farm

IN THIS ISSUE

Pepping Plants with Electric Heat

BY GEO. W. KABLE

The farmer whose hotbeds are equipped with soil heating cable need not worry about sunless days or chilly nights. Stronger plants produced in less time, as well as a higher percentage production are proven facts as stated by the author in this interesting article presented on page 4.

Lighting Your Kitchen

BY ROBERT L. ZAHOUR

The kitchen is the housewife's workshop. Its lighting arrangement and selection of fixtures should receive the same careful attention as given the best room in the home. The author on page 7 tells how to accomplish effective results.

Hotbed Cable Warms Poultry Water Fountain

BY LAWRENCE C. MOORE

Lead or copper sheathed cable, ordinarily used for soil heating is adapted to poultry water warming. Mr. Moore outlines on page 8 the method of installing the cable.

Cooking the Soil For Baby Plants

BY FRANK C. DOIG

Plants worth raising are certainly worth giving the proper start in their growth. To do this, soil pests must be eliminated. The author on page 9 tells how electricity is being employed in an effective manner for soil sterilization.

We Try an Electric Brooder

BY GRACE B. BAERTSCH

By installing an electric brooder the Baertschs eliminated the unpleasant task of firing the coal burning brooder. The electric type maintains a more even temperature, another advantage over the old method. The author outlines her experiences on page 10.

Regular Monthly Features

On the Air, page 11; Electrical Housekeeping, page 13; Questions and Answers, page 16; What's New, page 17.

EDITORIAL

AFTER four years of declining prices of farm products, the trend apparently has been reversed. Prices are advancing steadily. The Administration's program is designed to keep prices up once they have reached pre-depression levels.

To those who have had to labor without profit through the long four years just passed, the change is a most stimulating one.

* * *

While our Pilgrim forefathers instituted Thanksgiving day as a time for rendering thanks to God for their harvests, and for other favors shown them, we today may be thankful not only for the harvests but for the better prices we can secure for them as well.

There is much which is encouraging this year. Better immediate prices, more promise for the future, ability of farmers to buy more materials and equipment, which in turn aids materially in increasing employment in the factories in cities, and thus reduces the number of unemployed.

Taxes may be high just now, but as increasing numbers of workers are put back to work and are thus enabled to pay their taxes, the burden will be distributed over a greater number and thereby eased up for those who have been doing more than their share in the past depression.

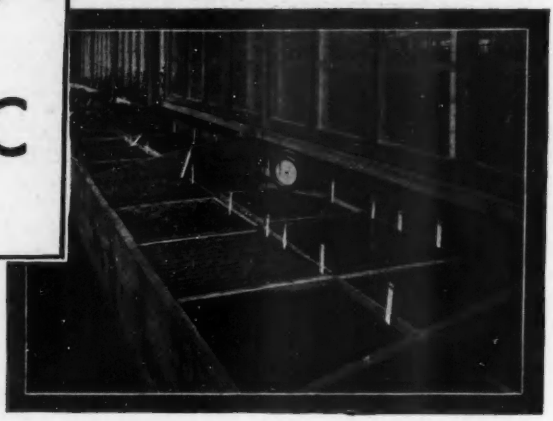
Truly, there is much to be thankful for this year.

THE PUBLISHERS.

Issued Monthly by
CASE-SHEPPERD-MANN PUBLISHING CORP.
Editorial-Executive Offices: 24 West 40th Street, New York
KARL M. MANN, *President* I. H. CASE, *Vice-Pres. and Gen'l Mgr.*
FRED SHEPPERD, *Editorial Director* JESSE H. NEAL, *Vice President*
K. H. GORHAM, *Advertising Manager*
CHICAGO: 6 No. Michigan Ave.—W. S. CLEVENGER, Western Manager: L. M. ROCHE, Western Representative
SAN FRANCISCO: 1045 Sansome St.—C. H. WOOLLEY
Subscription price, 75 cents per year; single copies, 10 cents; Special Bulk Rates on Application
Content: Copyrighted 1933 by Case-Shepperd-Mann Pub. Corp.

PEPPING PLANTS with ELECTRIC HEAT

By GEO. W. KABLE



Many kinds of plants being grown in flats over electric heaters on the H. W. Collin farm, Mt. Clemens, Mich.

HERE'S a use for electricity of the kind you have been looking for. Pepping plants with electric heat gives you an advantage over other methods and produces a profit.

Electric heating for growing plants has a wide application. Its range is from inside the Arctic Circle in Norway, where electrically heated beds are used for growing vegetables, to southern California in midsummer, where a little extra heat in the soil helps to root the cuttings or germinate the seeds of subtropical plants. In between there are a great variety of uses: the growing of early vegetables where a little heat is needed to protect them from frost; the growing of plants for field setting, such as tomatoes, cabbage, lettuce, peppers, eggplant, many flowers, cantaloupes, sweet potatoes, and tobacco; the germination and starting of costly seeds; the propagation of many types of plants and shrubs from soft and hardwood cuttings; the protection of plants in cold-frames from frost; the forcing of early flower blooms for high-priced markets or special markets, as for Easter lilies; as a money-saving substitute for the greenhouse heating plant in late spring and early fall; and even for year around heating in the small or mild-climate green house.

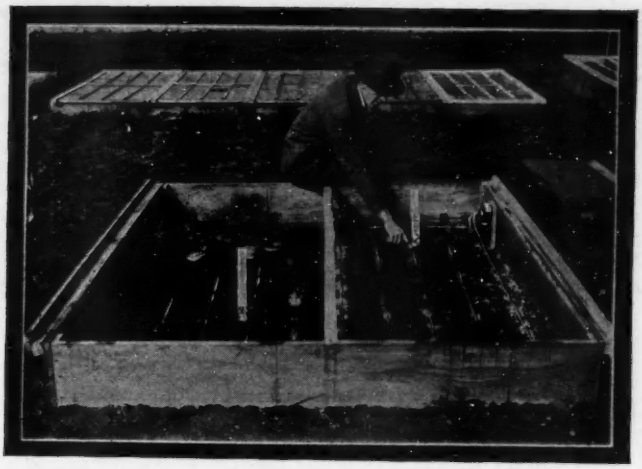
Sweet potato bed of E. L. Allen, Ritchie, Md., under construction. Note windbreak at left. Power consumption was under one-half kwh. per square yard per day.

And all of these applications are made with a simple, safe, little heating wire, commonly known as soil heating cable, that costs around six cents per foot. The cable is about as thick as a pencil. It is sold in lengths of 60 to 65 feet for use on 110 or 120 volt electric circuits, and is easily bent into any shape desired. When not in use for plant growing it may be used for heating the brooder house floor, for warming stock water tanks, or for a number of other purposes.

Bench Heating Popular

Perhaps the most popular use for electric heating is in propagating benches. Commercial greenhouse men quickly recognized in electric heat a means for increasing their profits in growing plants. The J. J. Chisolm nurseries of Garrett Park, Md., for instance, are just now potting a 94 per cent stand of azaleas from their electric cutting benches. In the past a grower did well to make 80 per cent of his cuttings grow. Out in Portland, Oregon, Mr. Theodore Van Veen has gained a year's time in putting new varieties of azaleas on the market by being able to start the seeds at an out of season time of the year.

Electric heat in the cutting bench not only gives an increase of 15 to 60 per cent in the number of cuttings which take root, but it shortens the rooting time as much as one-half. It also enables the grower to produce plants from hardwood cuttings which have been extremely difficult to root without the electric bottom heat. That means new



A simple back yard or farm hotbed with 1 x 12 inch frame placed on the soil surface. Heating cables are laid on the surface of the soil and the thermostat attached to a stake driven at the edge of the bed. This picture was taken February 24. Note the volunteer tomato plants which grew against the cable during experimental heating studies.

business, less labor, quicker markets, and greater returns per square yard of bed.

Electrically heated benches in the greenhouse are used for a variety of purposes. In addition to rooting cuttings, they are used for starting small and valuable seeds, for growing plants, and for producing flowers out of season. In all cases the heating cables are spaced 6 to 8 inches apart in the bottoms of the benches, or on a one inch layer of sand, and the soil or propagating sand is placed directly over the cables. The temperatures desired for the different types of growth are obtained by hand regulation of the current, or by a thermostat which controls the minimum temperature of the bed.

Electric Heat Aids Nature

Since most of the things which can be done with electricity in a greenhouse or cutting bench can also be done in a hotbed or plant house made of sash, the remainder of this article will go into some detail about hotbeds. The same principles generally apply to both.

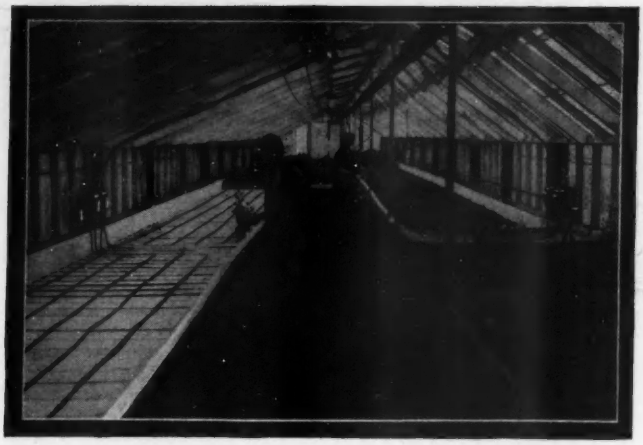
Before getting down to brass tacks on the "how" of the hotbed, let's size up the job. Nature has certain requirements for plant growth. They include suitable soil, water, and above all, the light and heat which normally comes from the sun. Electricity helps nature by producing artificial heat out of season. It is, however, highly desirable to capture and utilize as much of the sun's heat as possible. Electricity is only a supplement to the sun in a hotbed, but it is that supplement which makes the difference between growing plants or not growing them.

We use glass over hotbeds and for greenhouses because the light and heat rays from the sky and the sun pass through it readily, and are stopped and absorbed by the soil in the beds. Glass also keeps the heat from being carried out of the bed by winds or by the small air currents which are set up in the bed itself. It is important from the standpoint of economy to have the sash fit close to the frame, and the bed as tight as possible. Ventilation should be managed by the grower and not by the night winds.

Hotbeds Easy to Build

Electric heat is exceedingly simple to use in a hotbed. All that is necessary is to place the cable where the heat is wanted and to use good horse sense in taking advantage of the heat and light from the sun, and protecting the bed from heat losses. In its simplest form an electric hotbed consists of a suitable garden plot spaded up and planted, with electric heating cable laid on its surface or placed 6 inches below the surface. A board frame is built around the plot to protect it from winds, to save the heat, and to support the cover of glazed sash, which are made 3 feet by 6 feet in size. The sash should be given a slope so the water will drain off. If the slope is made toward the south, more sunlight will enter the bed. It is essential to have good drainage, as poorly drained soil will not only hinder plant growth, but soggy soil uses more electricity to keep it warm. If you have sat in a drafty room on a cold spring day, or paid the fuel bills for a house exposed to the winds, you will also know the desirability of a good windbreak. Such a simple electric hotbed, or your old hotbed with heating cables placed in

Straw mattresses saved one-third of the power during cold weather.



Electrically heated propagating beds of J. J. Chisolm, Garrett Park, Md. The benches are each 90 feet long and are used for propagating azaleas. Heating cables are laid in the bottom of the benches.

it, will grow better plants and cuttings than a manure heated bed, and more of them.

If you want to reduce your operating costs to a minimum, or maintain a higher temperature, or save on labor, there are some refinements over the simple bed described above which will be helpful.

A thermostat is the first and most desirable improvement to add. A thermostat is a device having a heat sensitive element which will cut off the power when the bed is warm enough and turn it on when the bed cools off. It does the job better than the hired man, or even the "boss," for it has a thermometer on its insides and nothing to think about but to keep its bed comfortable. One thermostat with a 25 ampere rating will regulate temperatures in a bed containing 24 square yards on 110 volt service, or 48 square yards on 220 volt service. A 15 ampere thermostat will regulate up to 12 or 28 square yards. Soil thermostats cost from $6 to $11.

Regulates Faithfully, Saves Power

A thermostat not only regulates the temperature faithfully, but it saves power by turning it off the instant it is not needed, and it turns the power on to prevent cold damage when the owner might forget.

Covers at night are next in importance in saving power. Either you or the plants could sleep in your beds at night without covers if the house were warm enough; but the covers save fuel. The National Rural Electric Project found that 2-inch straw mattresses on the beds at night saved one-third of the power when outside temperatures were 13° to 43°. E. L. Allen of Ritchie, Md., operated his hotbed from February to April, 1933, with minimum outside temperatures around 20° on 0.4 kwh. per square yard of bed per day. He had good windbreaks, and covered the beds with double thicknesses of burlap sacks on cold nights.

Double glass in sash resulted in saving 20 to 45 per cent on the power bill during 20° to 65° weather in February. Mats and double glazing each saved more power than complete cinder insulation during the same period.

Cinders for insulation have been recommended by a number of experimenters. Under test the power savings amounted to as much as 30 per cent for complete side and bottom insulation with 8 to 10 inches of cinders. Further tests indicated that about three-fifths of that saving was due to the cinders around the side of the bed to a depth of 8 inches below the heating cable. A cinder bank extending down to 2 inches above the cable accounted for only one-third of the saving. When cinders were placed under the bed soil, more frequent watering was necessary to keep the plants growing well. Cinders on the bottom have little effect if heating cables are placed on the soil surface.

Experiments during the past two years at the University of Maryland have indicated that better results are obtained with most plants by pressing the heating cable into the soil surface, rather than covering it with 6 inches of soil as has been the common practice. Comparing the surface heated bed with a bed having the cable at a depth of 6 inches and thermostats set and placed identically, the surface heated bed maintained a 5° to 12° higher night temperature during freezing weather from February to April. The power consumption was practically the same in both beds. As the outside temperatures increased, the surface heated bed used less and less power until the consumption was only two-thirds that of the under heated bed. The temperature of the cable was not high enough to injure plants growing in contact with it, and the plants were larger and sturdier and had better root systems than with under heat.

Surface heating was not satisfactory with sweet potatoes, the vines raising the heaters from the soil. It would probably not be desirable for cuttings.

Where plants are to be grown in flats or pots, the cable should be covered with only ½ to 1 inch of sand or soil, for mechanical protection. In placing the cable it is best to start 2 inches from the frame and to place the second run about 6 inches from the first, spacing the intermediate runs uniformly through the center of the bed. This will care for the extra heat losses at the edges. Sixty-five feet will give better heat distribution than 60 feet in a 6 x 6 bed, and will last longer because it will not get so hot. The bed soil should be nearly level in order to maintain a uniform temperature over the entire bed.

Thermostats should be set to turn on the heat at the minimum temperature desired. Thermostats do not all have the same differential between on and off positions, but it is the minimum temperatures which are most important and should be controlled.

Fig. 1. Low fixtures cast shadows, an undesirable feature for kitchen lighting.

LIGHTING YOUR KITCHEN

By ROBERT L. ZAHOUR

IT MAY SEEM a bit odd to start with the kitchen instead of with the living room for our lighting lessons, but the kitchen is a room of importance. A home may be built without a sun room or a living room but without a kitchen, never!

And this is the room in our home where somebody must work a good many hours each day. In most families that somebody is likely to be mother. Winter mornings, there is breakfast to prepare by electric light. And after dark, in the evening, there is always kitchen work to do; in fact, there are gloomy days when artificial light is necessary almost all day long in the kitchen. Factory workrooms are compelled by law to be at least resonably well lighted, but the workroom of the home, the kitchen, often is very badly lighted just because mother never has complained about it.

To be well lighted, there should be a flood of soft, even light in the kitchen that gets into every nook and corner. When you stand at the sink while washing the dishes, there should be no deep, black shadows on the dishes. It should be impossible to "stand in your light" so as to throw a dense shadow on your work anywhere in the room. You should be able to open the oven door and actually see in.

Many kitchens are lighted with a fixture like the one shown in Figure 1. No kitchen can be well lighted with this old style lighting equipment. In spite of everything you do, it will always make bad shadows, because the bulb is so low that you can't help throwing your own shadow in front of you. There's only one cure—take it out.

Use Frosted or Daylight Bulb

Proper light for the kitchen means a 100 watt inside frosted lamp or 150 watt daylight or blue lamp, put close up to the ceiling so that there will be a minimum of shadow. To soften the light, it should be surrounded by a milk-white, all enclosing glass globe, Figure 2. Preferably this piece of glassware should be a little flat in shape in order to spread the light properly over the room as illustrated in Figure 3.

Changing the old style fixture to this modern

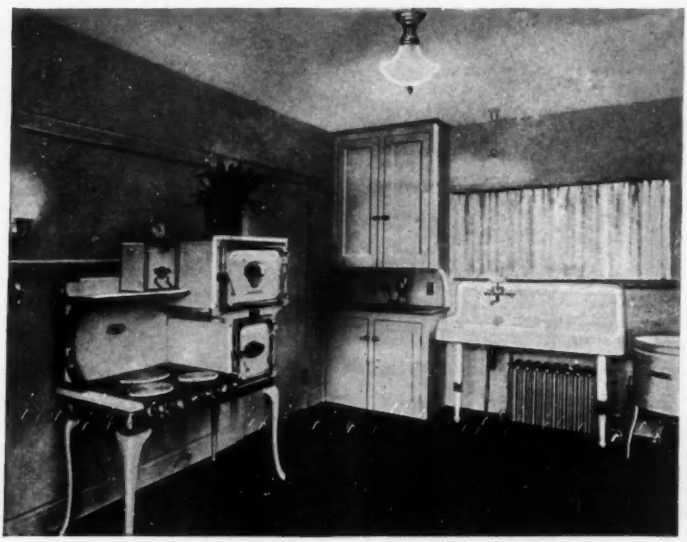
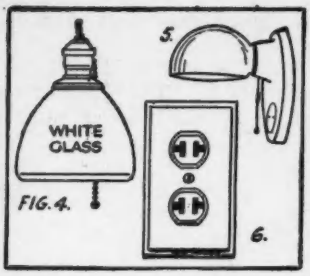


Fig. 7. An electrified kitchen is a joy to any housewife, and good lighting makes it possible to use to the fullest extent in an efficient manner these new servants of the kitchen.

Fig. 2. A milk white glass globe softens the light.



Figs. 4, 5 and 6. Lights over sink and stove as well as the convenience outlet will be welcome additions.

Fig. 3. A slightly flattened globe will spread the light over the room.

kitchen light will make a surprising difference in the appearance of the room and in the ease with which kitchen work may be done.

In order to be sure that there is plenty of light at the sink, and no bad shadows, it is usually well to provide in addition to the light at the ceiling, a bracket fixture on the wall over the sink, or, if that is not possible, another light hung from the ceiling, which will be over the sink. This light should be just high enough above the head to be out of the way. This fixture should have a deep, open bottom, dense milk-white glass shade. It may have an insulated pull chain switch. In some kitchens a fixture such as that shown in Figure 4 may be needed over the kitchen stove, slightly to the left side so that nothing is hung directly over the food.

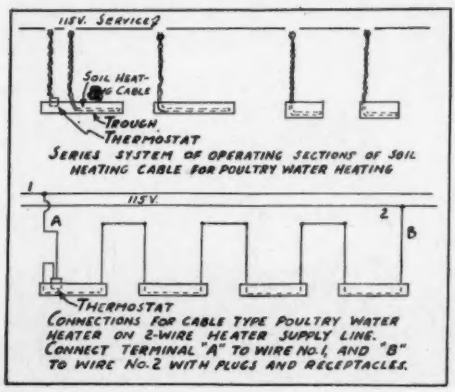
Just as a 100 watt lamp in the ceiling fixture will give proper lighting, so a 40-watt, inside frosted lamp is excellent for the fixture, shown in Figure 5, over the sink. Some people prefer a 150-watt daylight or blue lamp in the center fixture and a 60-watt daylight or blue lamp in the fixture over the sink or stove. The use of daylight or blue lamps makes a well-kept kitchen look even more spick and span and gives to it, night or day, a daylight cheerfulness.

When using an electric iron or any other appliance, we need all the light we can get. Therefore, it is not a good thing to remove a bulb to connect the iron. Have a double convenience outlet like the one shown in Figure 6, in the wall near the table, about 36 inches or more above the floor.

HOTBED CABLE WARMS POULTRY WATER FOUNTAIN

By Lawrence C. Moore
Agricultural Engineer

THE flexibility and low cost of the lead or copper sheathed soil heating cable suggested that it could be economically adapted to the job of poultry water warming. A test was made during the winter of 1931-32 in which the cable proved to be not only well adapted to the job, but to have some advantages in cost for large installations, adaptability to any size or shape of trough or fountain, and ready adaptability to thermostatic control.


115V. SERVICE
SOIL HEATING CABLE
TROUGH
THERMOSTAT
SERIES SYSTEM OF OPERATING SECTIONS OF SOIL HEATING CABLE FOR POULTRY WATER HEATING
1
115V
A
2
B
THERMOSTAT
CONNECTIONS FOR CABLE TYPE POULTRY WATER HEATER ON 2-WIRE HEATER SUPPLY LINE. CONNECT TERMINAL "A" TO WIRE NO. 1, AND "B" TO WIRE NO. 2 WITH PLUGS AND RECEPTACLES.

The cable heaters are not so simple to install as the familiar immersion type of heaters. The latter may be plugged into a light socket or, better, into a socket on a special heater circuit through the poultry house, with one or up to any number of heaters within the capacity of the circuit connected.

The current carrying capacity of the heating cable is such that not less than a minimum length of 50 feet must be used on 115-volt service to prevent damage to the cable from overheating. Sixty or sixty-five feet of cable is used on 115-120 volt service for soil heating, but less cable (higher capacity) may be used for water heating. The safe length is insured by taking a standard length of hotbed cable and cutting it into sections to fit the several troughs or fountains to be heated. Each section is fitted with connections and plugged into a single line to become part of a series circuit. Thus if there are five troughs to be warmed,

(*Continued on page* 18)

COOKING THE SOIL
FOR BABY PLANTS

By FRANK C. DOIG

IT has been found through years of costly experience that many insect and disease organisms attacking young plants are carried in the soil. Greenhouse and hotbed operators suffer heavy losses each year through damage done by these pests. Experiments have shown that heat is probably the most practical and effective method of freeing soil of disease germs, insects and weed seed that retard the healthy development of useful plants.

Most authorities agree that a temperature of 180 degrees F. is sufficient to kill these pests and disease organisms and at the same time not injure the productivity of the soil. With these basic facts known a group of agricultural engineers and electricians set about to develop a soil sterilizing machine that would be simple to manage, cheap to construct and economical to operate. They found that electricity will meet these requirements when properly harnessed. But up to the time these men set to work no one had produced such a device as they believed necessary for practical use.

Pioneer Soil Sterilization Men

The men responsible for this pioneer work are C. F. Doucette, entomologist in charge of the U. S. D. A. laboratory near Sumner, Wash. Charles W. Wildebour, originator and developer of this method of soil sterilization and Glen Cushing, both of whom are agricultural engineers for the Puget Sound Power & Light Company, working under the supervision of J. C. Scott, chief agricultural engineer for this company.

The device perfected by these experimenters heats the soil by forcing an electric current through it. Metal plates are placed in the soil so that equal amounts of current can go from plate to plate through the soil or sand to be sterilized. With an even moisture content in all parts of the soil, an even temperature can be maintained easily, which is declared to be exceedingly difficult with any other method of soil sterilization as yet devised.

Current at the usual voltage of 220 as used on the farm and in electric cooking is used to operate the sterilizers. Damp soil reaches a temperature of 180 degrees F. in 5 minutes to 2½ hours, depending on the construction of the apparatus, according to experiments conducted at the Sumner station. Quicker results are obtained with wetter soil.

The maximum current consumption is reached very quickly and then consumption goes down owing to the drying of the soil. This fact in itself is considered a good safety device and prevents overloading. In practical operation current is turned off when the temperature reaches 180 degrees.

By means of a sliding bottom, the sterilized soil can be dropped to a container below and is ready for the planting boxes or beds. For large installations the metal plates may be set up on greenhouse benches and connected with the electric circuit.

The new electric soil sterilizer. Current cannot be turned on until the cover is closed. After being sterilized soil is dropped into the container below.

We Try ELECTRIC BROODING

By GRACE B. BAERTSCH
Baraboo, Wis.

WE have been brooding chicks artificially for nine years. We had always used the coal-burning brooders until last spring. And then Mr. Baertsch, who is the official fireman, went on a strike. Said he: "I am tired of getting up at night and dressing and running out to look after those fires. I am going to get an electric brooder."

That suited me—there was no argument there. I had always thought that if I were the one who had to look after the chickens they would have frozen to death long ago. It spoiled a lot of sleep every night, because we always got our chicks early while it is still cold and the fires must be kept up.

So we got one of the large size electric brooders. Although we intended to have only 400 chickens under it, we have found from experience it pays to get the large size brooders. Since it was early in the season, we set up an old heating stove in the brooder house also. I would strongly recommend doing this, as it keeps up the room temperature and therefore holds down the cost of operating the electric brooder.

Farther south this may not be necessary but living as far north as we do we often have very cold weather in early Spring. We had the heater on one side of the brooder house and the electric brooder in the center.

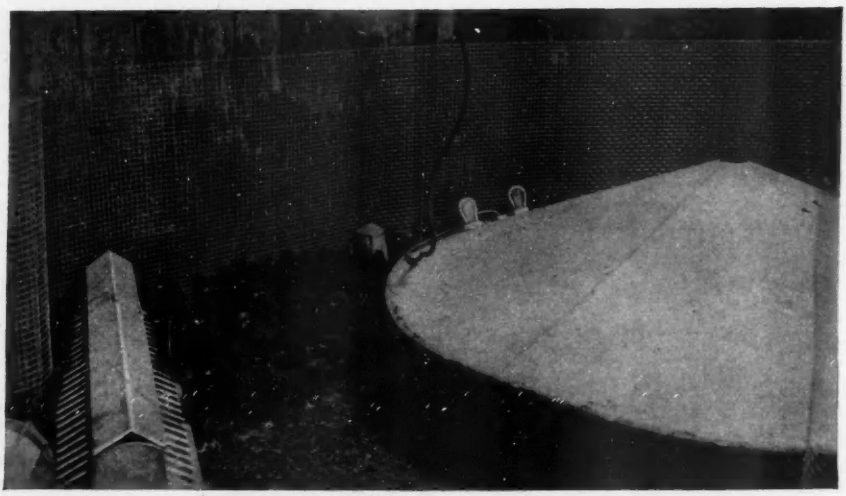
At first we had a fence around the brooder so that the chicks could not wander very far from the heat. We made this of a strip of roofing. As the chicks grew older we pushed it farther back.

When they were about six weeks old, we put in little roosts. They were the graduated type and made of laths nailed to heavier boards. I noticed that we had fewer chicks with crooked breasts than other years. This may have been due partly to the early roosting and also to the better heat. We had the strongest bunch of chicks that we have ever had.

Temperature Maintained More Evenly

Say what you will, I think it is the heat rather than the feed that influences the growth of the chick in its early stages. No matter how closely one watches those coal-burning brooders, the heat cannot be maintained anywhere near as evenly as it can be with the electric brooders. I think it is the uneven temperature that gives the chicks bowel trouble.

We put our pullets in their laying house the first of September and they have laid the best and most consistently of any pullets we have ever raised. We are very much pleased with them, and regret that we did not try the electric brooder sooner.



The electric brooder is capable of maintaining a more even temperature than the coal-fired type.

ON THE AIR

Conducted by James J. Henry

Christy Walsh Back on CBS

NOW that we're in the most thrilling part of the football season, we can get a lot of that football atmosphere and a good line on the various teams by following Christy Walsh's "All American Football Show" which is broadcast on Fridays over CBS stations.

From Friday to Friday, Walsh spends most of his time seeking information and other interesting material in the camps of the leading football teams all over the country.

Speaking of football, this program on Friday nights is a particularly appropriate beginning to

Christy Walsh, noted sports authority, is again the central figure in the "All America Football Show" broadcast over CBS stations every Friday evening during this colorful football season.

two days of football on the radio. Many of us are spending a large portion of Saturday afternoon at the radio following the games of our favorite colleges.

Radio has brought football to homes all over the countryside, and listeners, be they college trained or not, are becoming more and more interested in the game.

• • •

Waitress Becomes Radio Singer

SHE never saw a motion picture, a football game, a mountain, or a department store until a few months ago, and radio stations were just a vague term to Mona Greer of Texas. Then she got it "set in her head" to go to California, and a new radio personality dawned on the Western horizon.

While Mona was working as a waitress in a San Francisco restuarant, a well known theatrical man was struck by her quaint accent. She told him of her ambition to become a singer and he

EXTRA PROFITS

with ELECTRIC SOIL HEATING

$200 CELERY	$416 ROSES	$72 TOMATOES

Harry Boetcher, Great Falls, Montana, by electrically heating soil in hotbeds, had celery on the market three weeks ahead of any gardener in his district. The quality was also far superior, and he obtained top prices. The net result was that he made an additional profit of more than $200.

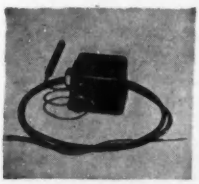
H. B. Fisher, City Greenhouse & Supply Co., near Cleveland, Ohio, grows roses for the cut-flower market. This season, by the use of electric soil heating, he increased his net income from blooms over that of last year by $416.

H. C. Pointing, Cleveland, Ohio, credited electric soil heating with $72 additional profits on tomato plants.

Many other gardeners and florists have found electric soil heating equally profitable. Often it has returned three or four times the cost of the equipment and electricity the first season. Write for literature that gives suggestions as to how you can get the most out of your greenhouses, hotbeds, and cold frames. See coupon below.

Equipment Costs Little

Sixty feet of G-E soil-heating cable, which heats 36 sq. ft. of soil, will cost you less than $4. The G-E thermostat, priced low, at $7.50, will handle up to 720 ft. of cable (up to 432 sq. ft. of soil). Your cost of operation can also be kept surprisingly low. See your electric dealer, or the rural representative of your power company.



G-E soil-heating equipment

For additional information, send the coupon below to the nearest G-E office or to General Electric, Dept. 6-201, Schenectady, N. Y.

GENERAL ELECTRIC

General Electric Company
Dept. 6-201, Schenectady, N. Y.

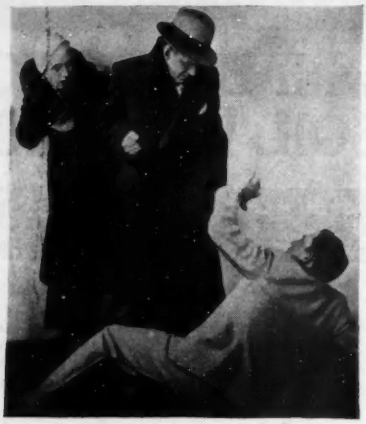
Please send me a copy of your publication GEA-1644A on "Heating Soil Electrically."

NAME.....

ADDRESS.....

.....820-3

brought her to NBC's San Francisco studios and presented her to Charlie Marshall, who directs



Spencer Dean, the manhunter—This photo shows how he appeared in one of the series of Crime Club mysteries a favorite of radio drama followers every Tuesday and Wednesday evening. Dean, in the center, is played by Edward Reese

and sings in Marshall's Mavericks, program of hillbilly and cowboy songs.

Mona and her "git-tar" joined the Mavericks, and now listeners hear folk songs of America sung with the flavor of realism.

But Mona refuses to give up her restaurant job. She continues to "tote" trays by day although she's a star on the air by night.

• • •

Roses and Drums, a Favorite Dramatic Program

ONE of the most popular dramatic radio presentations last year was "Roses and Drums," a series of episodes with a setting at the time of the Civil War. The broadcasts are back on the air this fall over Columbia Broadcasting system stations every Sunday.

The different sentiments of young people from both the North and the Confederacy form the basis for the dramatizations.

• • •

Tony Wons Back on the Air

TONY WONS, famous for his "Scrapbook," is back on the air with a piano team. The popular sage is being heard every Sunday over CBS stations.

Readings and letters are used in the broadcasts which have made Wons such a favorite among lovers of his philosophy, a philosophy that is taken from the hearts of "home folk."

• • •

Tom Mix Dramatic Show for Boys

THE career of Tom Mix, colorful personality of the screen, is being dramatized in a program planned especially for boy listeners. The series is on the air on Mondays over NBC stations.

Typical episodes in the life of the moving picture idol are used in each radio broadcast. Mix personally has supervised the preparation of the scripts for the programs.

Special sound effects are being used to increase the realism of the dramatizations, and although each broadcast is complete in itself a thread of concurrent events carries the interest from week to week.

During his career Tom Mix has been blown up once, shot about 12 times, and injured 47 times in movie stunts. His career began when he helped round up snipers as a scout in the Spanish American War.

In Texas he enlisted in the Texas Rangers. Rugged health pulled his through serious wounds a number of times, and when his term with the Rangers expired, he became a cow puncher. It was news reel pictures of his winning of the steer throwing contest at a Seattle roundup that gave him the idea of entering moving pictures. In Hollywood he became one of the screen's greatest stars, and today is known to theatre goers all over the world.

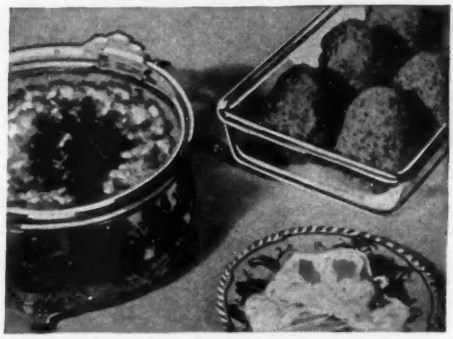
Walter Baiufuss and the Homesteaders—a new picture of the famous Farm and Home Hour band which is heard each noon-day playing the best in music for the particular enjoyment of listeners over the countryside.

ELECTRICAL HOUSEKEEPING

Conducted by GAIL MEREDITH

CHANGING FLAVORS
In Vegetable Cookery

"FLAVORS are not necessary as foods in the sense of being used as building material for the body," said Miss Abby Marlatt, Head of the Home Economics Department of the Wisconsin College of Agriculture, in the course of a talk on changing the flavors in vegetable cookery, "but



they are of value to adults in stimulating appetite and increasing enjoyment in foods."

Then she went on to show us what can be done with a humdrum vegetable like carrots. If you have been thinking that serving them up with butter, or floating about in a cream sauce exhausted the possibilities for variety try some of these on your family.

To preserve the natural flavor of the carrots:

1. Slice, cook 10 to 15 minutes in water to cover. When water is nearly evaporated, add 1 teaspoon sugar and 1 teaspoon butter for each carrot used. Heat until coated.

To increase the sweet flavor:

2. Slice and to each carrot add 1 tablespoonful seeded raisins, cover with boiling water and cook until tender and water is nearly evaporated. Salt slightly and add ½ teaspoon lemon juice to each carrot used.
3. Slice—Cook as in No. 1. Add butter and honey (1 teaspoon to carrot) and lemon juice.

To decrease the sweet flavor:

4. Slice carrots and apples and cook in covered dish slowly in butter until tender but not browned.
5. Slice carrots and cook as in No. 1. Chop pickles fine and add with the butter.

To add new flavors:

6. Slice carrots and onions fine. Separate onion into rings and cook both in butter in covered dish until vegetables are tender but not brown. Salt.
7. Slice carrots, cover with boiling water and add 1 clove garlic to six carrots. Boil water away, salt, and serve with butter and chopped parsley.

Rice is a mild and unobtrusive food, but Miss Marlatt points out several ways the world cooks it to give it distinctive flavor and individuality.

First in importance for those of us who use it seldom come her directions for cooking the rice itself. If you live south of the Ohio, you will not need them, for you know how to cook rice down there, but they are for the rest of us.

"When rice is used," says Miss Marlatt, "the grains must be cooked so that each is unbroken. To do this boil the rice in salted water until tender (twenty minutes). Let the water evaporate. Drain in colander and partly dry in oven."

Then to add flavors she recommends:

1. Grated cheese and tomato puree lightly mixed with cooked rice.
2. Chopped cabbage cooked in milk added to cooked rice, mixed with it, and grated cheese sifted over the top.
3. Chopped or cubed carrot cooked until tender and mixed with hot cooked rice.
4. Or the Italian way.

1 cup rice (washed and dried)
½ onion sliced in rings
¼ cup butter
3 cups boiling water and cube bouillon or meat broth
3 raw tomatoes or 1 cup solid tomato from the can
1 ounce grated ripe cheese.

Melt 1 tablespoon butter in stew pan. Add the onion which has been sliced and separated into thin rings. Cook over gentle fire until onion is tender but not brown. Stir it occasionally. Then

(*Continued on page* 18)

for Water Systems of Utmost Dependability—

ARE you considering the purchase of a modern water system that will give you a plentiful supply of fresh running water at all times? Then, by all means, write to Myers. Ask for attractive booklet—and name of nearest Myers Dealer.

Myers Water Systems—for electric, gas engine, wind or hand power operation—are completely dependable, quality-built thru and thru. Myers has never built a "bargain" water system. *Yet Myers prices are very moderate.*

Write us today. Find out how little it costs to have *the best that money can buy.* Water Systems for deep or shallow wells—capacities 250 to 10,000 gallons per hour.

MYERS Self-Oiling Water Systems

THE F. E. MYERS & BRO. CO.
361 Fourth Street
Ashland, Ohio
"Pump Builders Since 1870"

(WS-18)

THANKSGIVING DINNERS

The private blessings —the blessings of immunity, safeguard, liberty, integrity—which we enjoy, deserve the thanksgiving of a whole life.

—Jeremy Taylor

By GAIL MEREDITH

MORE than three hundred years ago, the Pilgrim housewives got the first Thanksgiving dinner on the table in praise and gratitude for lives preserved and for plantings brought to harvest. We still are grateful. Not wars nor pestilence, not drought nor bank failures can keep us from observing, year after year, this feast of Thanksgiving, for the same simple blessings. And we still observe it at the dinner table.

Getting Thanksgiving dinners should have a chapter all its own in a social history of our times. The makers of menus would want to know what we have been eating the centuries through. The students of folks would see tragic dinners and sad dinners, and funny dinners, too, all mixed up with opulent family feasts. And if we cooks were telling the tale, the things that would go in would be, in all probability, the funny little accidents, the dinners that went awry, or some such stupendous trifles as make history for cooks.

Out of long years of Thanksgiving dinners what pops into my head when I try to get them in line? Why the time I drained the potatoes in the slop pail, of course, and the time we got into a restaurant we could not afford, when we were still too young and shy to get up and say so, and the time,—but let me tell you about them.

The first holiday I had ever spent with my husband's people, I was helping to get dinner on the table. I took the heavy iron kettle of potatoes from the stove and looked for a place to drain them. There was no sink in the kitchen, then, but a pail for waste water stood at one end of the work table. I hurried over to drain the potatoes into that.

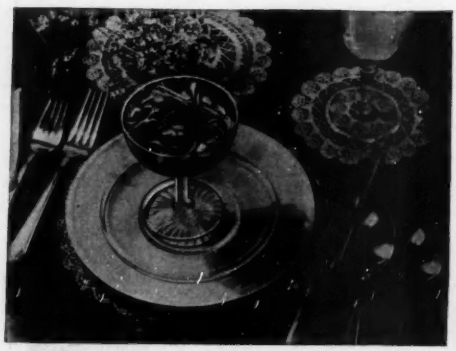
All went well until I tipped the kettle just one tiny fraction of an inch too much to get the last drop of water out. The cover slipped through my fingers and all our hot, mealy potatoes tumbled and splashed into the pail for the pigs.

But for making a dinner memorable pouring out a kettle of potatoes cannot hold a candle to cooking the turkey with only the outsides off and all of the insides in.

A Self-Stuffed Turkey

The turkey was sent to her by a relative in the country. I have often heard her tell how fair and fat and appetizing it looked when she got it ready for the oven. It had not taken long. She held it under the faucet and washed it off, then seasoned it liberally and rubbed it with butter. It came out of the oven looking so crisp and brown and crackling that she was fit to burst with pride.

It was greeted with a chorus of approval by her guests. While she was hurrying the vegetables into their dishes, her husband picked up the carving knife and began operations on the fowl. After the first cut, he caught his breath with an almost audi-



Above: To begin with. Right: Do you slit the top of the baked potatoes and put in a square of yellow butter?

ble sniff, and leaned over the bird to examine it more closely.

Then, and here my friends, I offer you, not a tender, perfectly roasted turkey, but that rarer bird,—the perfect husband,—then he picked up the platter and smiling about at his guests, said.

"This being my very first Thanksgiving turkey, I'm going to carve it in the kitchen after all, where you can't tell me how to do."

And he hustled the turkey out of the dining room before his neighbor on the right or his guest

With cider to drink.

on the left had really identified that hint of a queer unpleasant odor as coming from the bird.

With his back against the kitchen door and the turkey held out in front of him, he said to his astonished wife,

"Now, don't get excited, my dear. Just be perfectly calm. We'll get some more turkey, somewhere, and no one will ever know."

"Get some more turkey," Ann began indignantly. Then as she took a step toward him. "What is the matter? Why—is it spoiled?"

"Never you mind." Bob set the turkey down and put his arms around his wife. "I guess more of the insides should have come out or—er—something. But don't you worry. I'll get you some turkey. And kissing her hastily, he rushed from the house.

A few minutes later a hotel manager a mile away was startled to have a hatless, coatless young lawyer rush into the lobby, and buttonholing him, demand with deadly earnestness, "Eight portions of your best turkey,—with plenty of dressing."

The end of it all.

The simplest Thanksgiving dinner I ever ate was in 1918. If your memory serves, you will recall that at Thanksgiving time we were just finishing up the war. The armistice was a bare fortnight behind. My sailor husband had shore leave for the day, and I met him to go to a football game and dinner.

We saw the game all right, and started out directly afterwards to hunt up a place to eat. We were neither of us familiar with the city, but some entrancing sign like Silver Pheasant or Golden Peacock lured us in.

Hungry and cold, we eagerly took the menus handed us by a rather indifferent waiter.

Our eyes long trained to read the right hand column with the left, ran down the page. Turkey or chicken or goose, they were there in plenty, but the prices shrieked ruin to our thin pocketbooks.

I swallowed my consternation, and glanced up over the edge of my menu at my husband. He was looking at me with horror as well as hunger in his eyes.

I looked back at the card again. The waiter was showing signs of impatience.

"Scrambled eggs with ham," I said firmly.

"Make it two," said my husband.

And scrambled eggs it was, quite nice scrambled eggs with flecks of ham in them. And lest you think of us as going hungry, I might add that we had bread and butter, too, with a glass of milk for each of us.

ESCO *The Electric* MILK COOLER

increases profits, cuts costs, saves labor. Cools milk quickly to below 50 degrees and keeps it cold until shipped.

The ESCO Electric Dairy Utensil Sterilizer destroys bacteria as it dries cans and pails. An automatic time and profit saver.

Send for information. Ask also about ESCO Electric Water Heaters.

ESCO CABINET CO.
176 East Market Street
WEST CHESTER, PA.

CHROMALOX
SUPER SPEED RANGE UNIT

"We get a lot more heat and in much less time"
Mrs. J. W. Parks also says:
"I am pleased with our Chromalox heating element to the extent that we will soon have the entire range changed over."

You, too, can save 20% on your cooking time —and save money, too. Chromalox Units can be installed on any electric range and are now available at reasonable cost.

Try Chromalox Free on your own range without obligation

Ask Your Power Company for details—or write direct to Edwin L. Wiegand Co., 7580 Thomas Blvd., Pittsburgh, Pa., Manufacturers Chromalox Electric Heating Units.

Questions and Answers

Conducted by H. J. GALLAGHER

Question: *Is it possible to run the same motor on A. C. and D. C. current?*

Answer: Yes. Some of the smaller motors used in food mixers, fans, drills, sewing machines, etc., can be used on either 25 or 60 cycle alternating current or on direct current. These motors are specially constructed for this kind of operation. An A. C. motor will not operate on a D. C. circuit or vice-versa. Always make sure by consulting the nameplate of the motor the kind of service for which it is built.

Question: *I thought I would write your Question and Answer page of your paper. I wish to run a grind stone with a 3½-h.p. gas engine; pulley on engine is 6 in. diameter, 4 in. face. Could I run the grind stone direct from engine or should I put up a line shaft? What size pulley on stone should I use, shaft on stone is about ¾ inch? How do you figure the speed of pulleys?*

RAYMOND JAMES,
Ballston Spa, N. Y.

Answer: A rule to determine either the speed or size of pulleys connected by a belt is: Speed—Revolutions per Minute (R. P. M.) of the power unit x diameter in inches of the pulley on the power unit = R. P. M. of driven machine x diameter (inches) of its pulley.

When three of the above factors are known the fourth is easily determined.

A grind stone should operate at a speed of about 60 R. P. M. A gasoline engine operating at 500 R. P. M. equipped with a 6-in. pulley would require a 50-in. pulley on the grind stone for a speed of 60 R. P. M.

Engine: 500 R.P.M. x 6-in. pulley = 50-in. pulley on grind stone for a grind stone speed of 60 R.P.M.

This size of pulley is too large. A 3-in. pulley on the gas engine and a 24-in. diameter pulley on the grind stone would be satisfactory. It would be cheaper to buy a 24-in. pump jack pulley for a ¾-in. shaft and 3-in. pulley for the engine than to buy a line shaft and the necessary combination of pulleys. However, if a line shaft is available a 6-in. pulley on the engine to a 16-in. pulley on the line shaft, then a 4-in. pulley on the line shaft to a 12-in. pulley on the grind stone will give the correct speed.

Question: *I have a 13 inch cutting box. I intend to cut corn fodder for cattle. What kind and size motor do I need to run it?*

My service is 60 cycle, single phase, 115-220 *volts.*

I have the opportunity of buying the following motors all made by reputable manufacturers:

2 h.p. 3,450 R.P.M.....@ $37.50
3 h.p. 3,450 R.P.M.....@ $42.50
2 h.p. 1,150 R.P.M.....@ $47.50

C. J. SMITH,
Hamilton, Ohio.

Answer: I am assuming from the description of your cutter that it is of the fly wheel type. Cutters of this type with four, eleven-inch knives, operating at a speed of 400-500 R. P. M. and cutting dry fodder at the rate of ½-¾ tons per hour can ordinarily be operated by a 2 h.p. motor. The higher speed motors are undesirable for the large majority of farm jobs.

The standard four pole single phase motor with an operating speed of 1,725 R. P. M. is the motor in general farm use. A six pole motor operating at approximately 1,150 R. P. M. has many advantages over the four pole motor, except in cost; they are too expensive to displace the four pole motor.

The 1,150 R. P. M. motor at $47.50 would be a better buy than the high speed motors listed. This motor equipped with a pulley one-half the size of pulley on the cutter would operate the cutter at the correct speed. The motor used should be 60 cycle, single phase, repulsion-induction type.

Boonstra Chairman Rural Electric Division

President Arthur Huntington of the American Society of Agricultural Engineers has announced the appointment of Richard Boonstra as Chairman of the Rural Electric Division for the Society year ending June 1934. Mr. Boonstra has a fine record of accomplishment with the Public Service Co. of Northern Illinois, and he is admirably equipped to head up this important phase of the Society's activities.

Prof. B. D. Moses of the University of California has been appointed Vice Chairman.

ASK YOUR ELECTRIC COMPANY

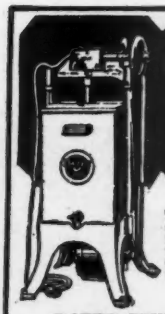
DUAL-USE

Two motors for the cost of one.

The WOODS ELECTRIC FEED GRINDER is designed so that the motor will operate the Water Pump, Milker, Cream Separator and other power machines at the same time it is automatically grinding feed.

The Rural Specialist at your Power Company will explain.

W. C. WOOD CO., LTD., TORONTO, CANADA



NEW WAY TO CHURN

Thousands are changing to this simple, convenient, modern way to churn. It's the famous DAZEY principle adapted to electrical operation. Ends the drudgery. Just turn the switch. Made in 2, 4, 6 and 10 gallon sizes.

Write today for catalog and further information.

DAZEY CHURN AND MFG. CO., Dept. 27
Warne and Carter Avenues ST. LOUIS, MO.

What's New

Reviewed by T. E. HIENTON

Electric Fan-Heater

Fall and early winter bring occasional chilly days when a small amount of heat is needed to make rooms in the farmhouse comfortable. An electric heater will solve this problem before the heating plant has been started. In recent equipment an electric heater is combined with a small electric fan so that the outfit can be used as a heater in winter and as a fan in summer.

A new fan-heater has been announced by the manufacturer of a well-known line of electrical heating units. This article is equipped with a switch which operates either the heater or the fan. A small motor is of the shaded pole type, causes no radio interference and is equipped with oilless bearings, according to the manufacturer. The heater is of an enclosed type with 1,000-watt capacity. Finished in art-style bronze this heater is only 9 inches high and 8½ inches wide.

Range Cooking Unit

Electric cooking on the farm is now an accepted practice in many farm households throughout the nation. The new improved unit of one range manufacturer will be of interest to many readers. This improved unit has three advancements, new outer sheath, glass-sealed terminals and "flash-proof" terminal connections. Inconel (a nickel-chromium alloy) is now used as the outer sheath of the heating unit. It is reported that this material will not scale, dust, split, blister or swell. High temperature glass is now fused into the ends of the unit terminals and, with a lava bushing for a cap, replaces mica washers. The two outer terminals of the new coil are grounded so that the danger of a flash-over from the terminal to the sheath occurring when a liquid is spilled on the unit are greatly reduced.

Poultry Water Heater

The importance of keeping a constant supply of drinking water available for laying hens is well known to successful poultrymen. Before the invention of electric heaters for poultry drinking fountains, this was not an easy task during freezing weather in the winter. Warm water had to

World's Fastest, Most Economical Electric Cow and Horse Clipper

MOTOR IN HANDLE

STEWART Clipmaster

Powerful small universal motor is right in the handle of this amazing machine. Plates stay sharp much longer with its new improved ball bearing tension device. Does the toughest kind of clipping with an ease that will amaze you. Strong and sturdy throughout. Complete with 20 feet of rubber covered three-lead cord. Other clipping machines as low as $12.50. At your dealers or send us $2.00. Pay balance on arrival. Send for complete catalog telling about increasing profits from your dairy herd.

$18.50

Chicago Flexible Shaft Company

5524 Roosevelt Road, Chicago, U.S.A.

44 Years Making Quality Products

Investigate these Money and Labor Saving Electrical Applications!

FOR WATER SUPPLY:

Automatic Water Systems (*see advt., page* 13)—Pump Jacks—Water Heaters (*see advts., inside front cover, page* 13)

FOR THE HOUSEHOLD:

Ranges (*see advt., inside front cover*)—Refrigerators—Clothes Washers—Vacuum Cleaners—Ironing Machines—Dishwashers—Flat Irons—Food Preparing Machines—Ice Cream Freezers—Sewing Machines—Table Appliances—Clocks—Range Replacement Units (*see advt., page* 15 *and inside front cover*)—Floor Polishers.

FOR THE DAIRY:

Milking Machines—Milk Coolers (*see advt., page* 15)—Cream Separators—Churns (*see advt., page* 16)—Bottle Washers—Dairy Sterilizers (*see advt., page* 15)—Clipping and Grooming Machines (*see advt., page* 17)

FOR POULTRY:

Incubators—Brooders—Time Switches—Drinking Fountain Warmers—Ultraviolet Light.

FOR REPAIR AND MAINTENANCE:

Soldering Irons—Tool Grinders—Drills—Paint Sprayers—Woodworking Machinery—Motors.

MISCELLANEOUS:

Feed Grinders (*see advt., page* 16)—Ensiliage Cutters—Corn Shellers—Hay Hoists—Feed Mixers—Stationary Spray Plants (*see advt., page* 13)—Burglar Alarms—Ventilators—Soil Heating Equipment (*see advt., page* 11)—Radio Sets.

Right now is the time to get complete information. Many of your questions can be answered most satisfactorily by our advertisers. Read the advertisements carefully for these manufacturers are best equipped to help you and will answer your questions without obligation.

Any other information that you need will be supplied if you will fill out and mail this handy coupon.

TEAR OFF HERE

Electricity on the Farm, 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying.

....

....

My name is .....

Address .....

..... 11-33

be carried several times daily to the poultry house to insure a constant supply and aid in winter egg production. In recent years several satisfactory heaters have been manufactured and offered to the public.

One of the most recent electric heaters and perhaps one of the most economical is that developed by an eastern manufacturer of electrical equipment. This new heater is of the immersion type, which has been shown in experiments to be the most efficient, and is equipped with a thermostat to cut off the current when the water temperature reaches 50 degrees F. The heater is available for 110-volt current and is provided with a 200-watt heating element. A rubber covered cord is provided with the heater.

Changing Vegetable Flavors

(*Continued from page* 13)

add the washed and dry rice and stir and cook slowly until each grain of rice is covered with butter and looks shiny (about 3 minutes). Add

the raw skinned tomatoes which have been cut into fine pieces. Pour over 1 cup boiling water or broth and stir and cook gently until most of the water is absorbed. Then add the second cup, repeating the process. The third cup is usually enough to cook the rice until tender but not too soft (20 minutes in all). Remove from the fire and with two forks lift in 1 ounce of grated cheese, and pour over the rice 2 tablespoons of melted butter. Serve hot with grilled sausage or broiled liver. It is good as long as it lasts. Rewarming improves it.

The next recipe is from Armenia. Miss Marlatt says it is called Tembel Dolma.

3 pounds cabbage	½ cup rice
4 onions	½ cup oil
1 bunch parsley	salt and pepper.

Chop the onions and fry in oil until brown. Add the chopped parsley and chopped cabbage and cook for five minutes, then add 1½ cups boiling water and the rice; continue to cook slowly until rice is tender. Season. Serve with grated cheese as an accompaniment.

The last one is a Malay recipe.

To make this use:

1 pint rice	¼ pound light brown sugar
2 quarts water	1 teaspoon turmeric
1 cup seeded raisins	1 tablespoon butter

Wash the rice well. Boil water. Add dry ingredients and dry rice and boil for 30 minutes to one hour.

Cable Warms Poultry Fountain

(*Continued from page* 8)

there will be five sections of cable in the circuit, and if one section is plugged out, the entire circuit will be shut off.

The flexibility of the cable sections both as to size and shape makes this system adaptable to cases requiring various sizes and shapes of containers. The sections may be stretched out in the long trough, coiled slightly for large circular pans or coiled closely for small pails.

In some cases, the heaters may be supplied by a single wire run through one or more houses and looped back to the source as illustrated in Figure 1; or if a two-wire heater circuit is already installed, each cable circuit may be connected by plugging one end to one side of the two-wire circuit and the other end to the other side at a point further along the line. In this manner, one or more cable circuits could be operated from the main heater supply circuit.

A typical installation was made on a Washington County, Oregon, farm where there were four troughs of one size and one trough half again as large. The cable was divided into four sections 9½ feet long and one 13½ feet. This gave about 100 watts in each of the four troughs and 150 watts in the larger trough. The temperature of the water in all the troughs is held constant with a thermostat in one trough.

Best Results at 55 Degrees

The performance of any system of poultry water warming may be improved and the waste of power avoided by using a special, moderately priced thermostat to control the temperature of the water. A temperature of 55° to 60° seems to be sufficient for good results. To heat the water much above 60° not only wastes power but causes the hens to drink less water than when around 55 degrees.

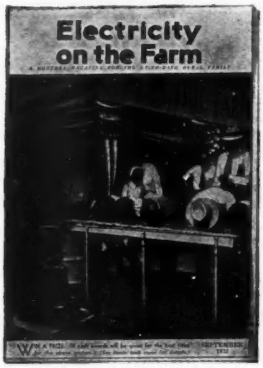
It is best to consult representatives of your local power company for assistance on laying out a cable system of heating.

CLASSIFIED ADVERTISING

The PARAGON POULTRY TIME SWITCH is scientifically designed and approved by state universities. It provides automatic control both morning and night and DIMS THE LIGHT AT NIGHT to allow the hens to return to roost. Low price and UNCONDITIONALLY GUARANTEED. Write for full information today. PARAGON ELECTRIC COMPANY. Van Buren and Dearborn Sts., Chicago, Ill.

MAKE YOUR HENS PAY THE GROCER. It is done every year. Give them more daylight hours. They will produce more eggs. Control the lights with a Da-Lite switch, only $4.95. Write for particulars. AUTOMATIC ELECTRIC MFG. CO., Mankato, Minn.

CASH PRIZE CONTEST



SEPTEMBER COVER

RULES
NOVEMBER CONTEST

Titles need not be longer than 10 words —the shorter the better—and they do not have to rhyme.

Ten cash prizes will be awarded for the 10 best titles for the picture on the front cover.

The first prize will be $20 cash and nine second prizes of $2 in cash will be awarded.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered correctly.

Send your title on the coupon below or make out a similar form on a plain sheet of paper or government post card.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before December 1st.

Winning names and titles will be announced in the January issue.

WINNING SEPTEMBER TITLES

FIRST PRIZE—$20

"Electricity pumps for a 'fair' welcome."

ROBERT HAKOLA, R. F. D. 2, Winlock, Wash.

Nine $2.00 Cash Prizes

"Pop stands—beware
Of electric fountains at the fair."
FRIEDA SCHULTZ, R.F.D. 2, Defiance, Ohio

"Cool water electrically supplied
Welcomes fair visitors on every side."
BETTY ANN MURPHY, R.F.D. 12, Knoxville, Tenn.

"The farmers' joy—
An electric water boy."
MRS. W. L. GRATZ, R.F.D. 5, Richmond, Va.

"Electric fountain—all complete,
Everyone exclaiming 'what a treat.'"
MRS. J. E. DIXON, Pungo, Va.

"The electric pump serves many at once."
MRS. D. CRAFT, R.F.D. No. 3, Maple Park, Ill.

"The need of the hour,
Water pumped by electric power."
MRS. C. E. FERGUSON, R.F.D. No. 4, Shawnee, Okla.

"Cool drinks on torrid days—
The benefit of electric ways."
VIRGINIA SMITH, R.F.D. 2, Wrightsville, Pa.

"A 'Fair' Example of Good Electrical Advertising."
MRS. T. E. HAYS, R.F.D. 1, Decatur, Ill.

"Everyone bows to the electric pump."
ERNEST LITWEILER, New Paris, Ind.

My title for the November Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

.....

.....

(a) Does your family own this farm?..... Or do you rent it?.....

My name is..... R.F.D.....

Post Office..... County..... State..... 11-33

DON'T GO THROUGH ANOTHER WINTER LIKE THIS.....

RUNNING water for the farm home is just as necessary as good lighting—and just as inexpensive. A small electric motor on your water system will deliver all the water you need to your kitchen, bathroom and laundry. Turn a faucet and there it is—day and night.

The motor starts and stops automatically, running just long enough to keep a storage tank always full. It pumps a ton of water for about three cents.

An electric motor will also pump water for dairy cattle, horses, hogs and poultry. You may use an automatic system—or a pump jack on your present pump.

ASK YOUR ELECTRIC COMPANY

OR

6 N. Michigan Ave. CHICAGO

Electricity on the Farm

24 W. 40th St. NEW YORK

W

ELECTRICITY ON THE FARM
24 West 40th Street
New York, N. Y.

Return Postage Guaranteed

Sec. 562 P. L. & R.
U. S. POSTAGE
PAID
New York, N. Y.
Permit No. 552